US009602611B2

(12) **United States Patent**
Apfel et al.

(10) **Patent No.: US 9,602,611 B2**
(45) **Date of Patent: *Mar. 21, 2017**

(54) **CURRENT UPDATES**

(75) Inventors: **Darren A. Apfel**, Redmond, WA (US); **Jon Friedman**, Seattle, WA (US); **Justin Michael Maguire**, Seattle, WA (US); **Matthew James Schoenholz**, Austin, TX (US); **Rosanna H. Ho**, Kirkland, WA (US); **Keith L. Rowe**, Seattle, WA (US); **Sandra I. Vargas**, Sammamish, WA (US); **Peter A. Bernard**, Bellevue, WA (US); **Matthew Justin Von Bencke**, Bellevue, WA (US)

(73) Assignee: **Microsoft Technology Licensing, LLC**, Redmond, WA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **13/523,617**

(22) Filed: **Jun. 14, 2012**

(65) **Prior Publication Data**

US 2012/0254765 A1 Oct. 4, 2012

Related U.S. Application Data

(63) Continuation of application No. 13/174,325, filed on Jun. 30, 2011, now Pat. No. 8,214,464, which is a continuation of application No. 12/017,906, filed on Jan. 22, 2008, now Pat. No. 8,005,927.

(51) **Int. Cl.**

G06F 15/16	(2006.01)
H04L 29/08	(2006.01)

(52) **U.S. Cl.**
CPC ***H04L 67/26*** (2013.01); ***H04L 67/04*** (2013.01); ***H04L 67/306*** (2013.01); ***H04L 67/32*** (2013.01)

(58) **Field of Classification Search**
CPC H04L 67/26; H04L 67/325; G06F 3/0486
USPC 707/618, 611; 709/203, 217, 219, 227
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,324,544	B1	11/2001	Alam et al.
6,400,381	B1	6/2002	Barrett et al.
7,275,215	B2	9/2007	Werndorfer et al.
7,873,356	B2	1/2011	Flynt et al.
8,005,927	B2	8/2011	Apfel et al.
8,214,464	B2	7/2012	Apfel et al.
2003/0065738	A1	4/2003	Yang et al.

(Continued)

OTHER PUBLICATIONS

"Final Office Action", U.S. Appl. No. 12/017,906, (Sep. 9, 2010), 27 pages.

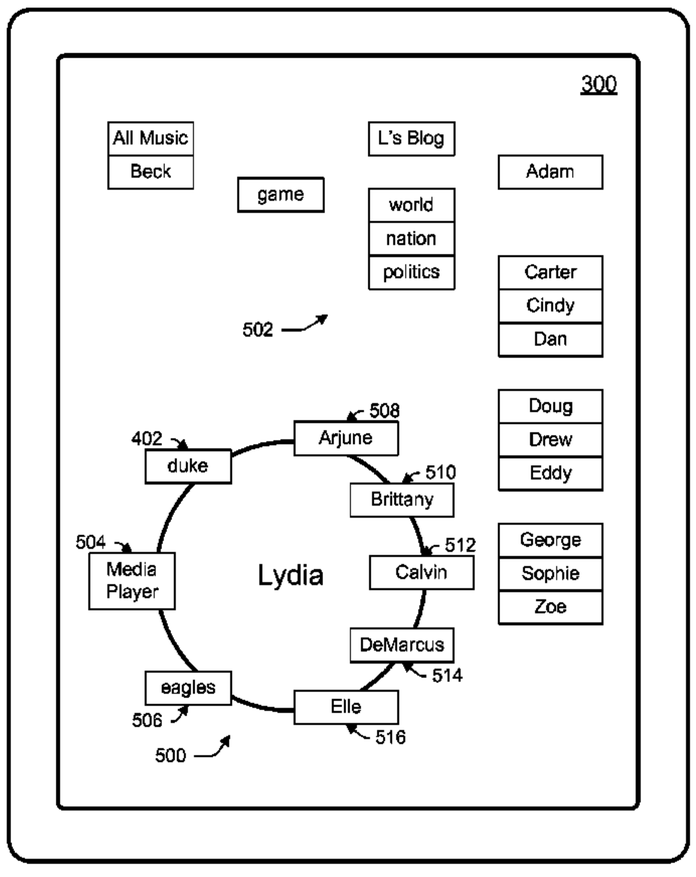
(Continued)

Primary Examiner — Hitesh Patel

(57) **ABSTRACT**

This document describes tools capable of differentiating a superset of entities from which a user may receive current updates effective to provide current updates for only some of the entities of the superset. In one embodiment, for example, the tools enable a user of a mobile device to select a set of entities from which the user will automatically receive updates that are current, easily accessible, and visible at-a-glance. The tools may forgo providing current updates for entities that are not selected by the user, though the tools may provide these updates when explicitly requested by the user or at particular times or events.

22 Claims, 11 Drawing Sheets



(56) **References Cited**

U.S. PATENT DOCUMENTS

2004/0117443	A1	6/2004	Barsness	
2004/0196315	A1	10/2004	Swearingen et al.	
2004/0204085	A1	10/2004	Vargas et al.	
2005/0027716	A1*	2/2005	Apfel	707/100
2005/0080859	A1*	4/2005	Lake	709/206
2005/0108348	A1	5/2005	Lee	
2005/0144538	A1	6/2005	Lawrence et al.	
2005/0171799	A1*	8/2005	Hull et al.	705/1
2006/0031772	A1	2/2006	Valeski	
2006/0167991	A1	7/2006	Heikes et al.	
2006/0173963	A1*	8/2006	Roseway et al.	709/206
2006/0230061	A1*	10/2006	Sample et al.	707/103 R
2006/0240856	A1	10/2006	Counts et al.	
2007/0043822	A1	2/2007	Brumfield	
2007/0067324	A1	3/2007	Burkhardt	
2007/0168443	A1*	7/2007	Morgan	709/207
2007/0182367	A1	8/2007	Partovi	
2007/0220552	A1	9/2007	Juster et al.	
2008/0005263	A1*	1/2008	Baraev et al.	709/217
2008/0172373	A1	7/2008	Jenson et al.	
2008/0256170	A1	10/2008	Hayashi et al.	
2008/0256443	A1*	10/2008	Li et al.	715/700
2009/0019376	A1*	1/2009	Quillen et al.	715/753
2009/0187621	A1	7/2009	Apfel et al.	
2011/0227810	A1*	9/2011	McKinney	G06F 1/1626 345/1.3
2011/0258553	A1	10/2011	Apfel	

OTHER PUBLICATIONS

"Friendvox",*Retrieved on*: <http://www.friendvox.com/faq.php> on Oct. 31, 2007, p. 1.

"Non-Final Office Action", U.S. Appl. No. 12/017,906, (Nov. 17, 2009), 17 pages.

"Non-Final Office Action", U.S. Appl. No. 12/017,906, (Feb. 2, 2011), 30 pages.

"Non-Final Office Action", U.S. Appl. No. 12/017,906, (May 12, 2010), 22 pages.

"Non-Final Office Action", U.S. Appl. No. 13/174,325, (Oct. 27, 2011), 22 pages.

"Notice of Allowance", U.S. Appl. No. 12/017,906, (May 16, 2011), 7 pages.

"Notice of Allowance", U.S. Appl. No. 13/174,325, (Mar. 1, 2012), 8 pages.

"Sun Java System Instant Messaging", http://www.janua.fr/doc/SJS-Instant-Messaging.pdf, (Jan. 2005), pp. 1-6.

Fried, Ina "Microsoft Wants to Know Who Your Friends Are", Retrieved from: <http://www.news.com/2100-1008_3-5170109.html> on Oct. 31, 2007, (Mar. 4, 2004), 3 pages.

Missig, Julian et al., "iChat Thought Bubbles", Retrieved from: <http://missig.org/julian/projects/jabber/iChat/> on Oct. 31, 2007, (Sep. 19, 2002), 8 pages.

* cited by examiner

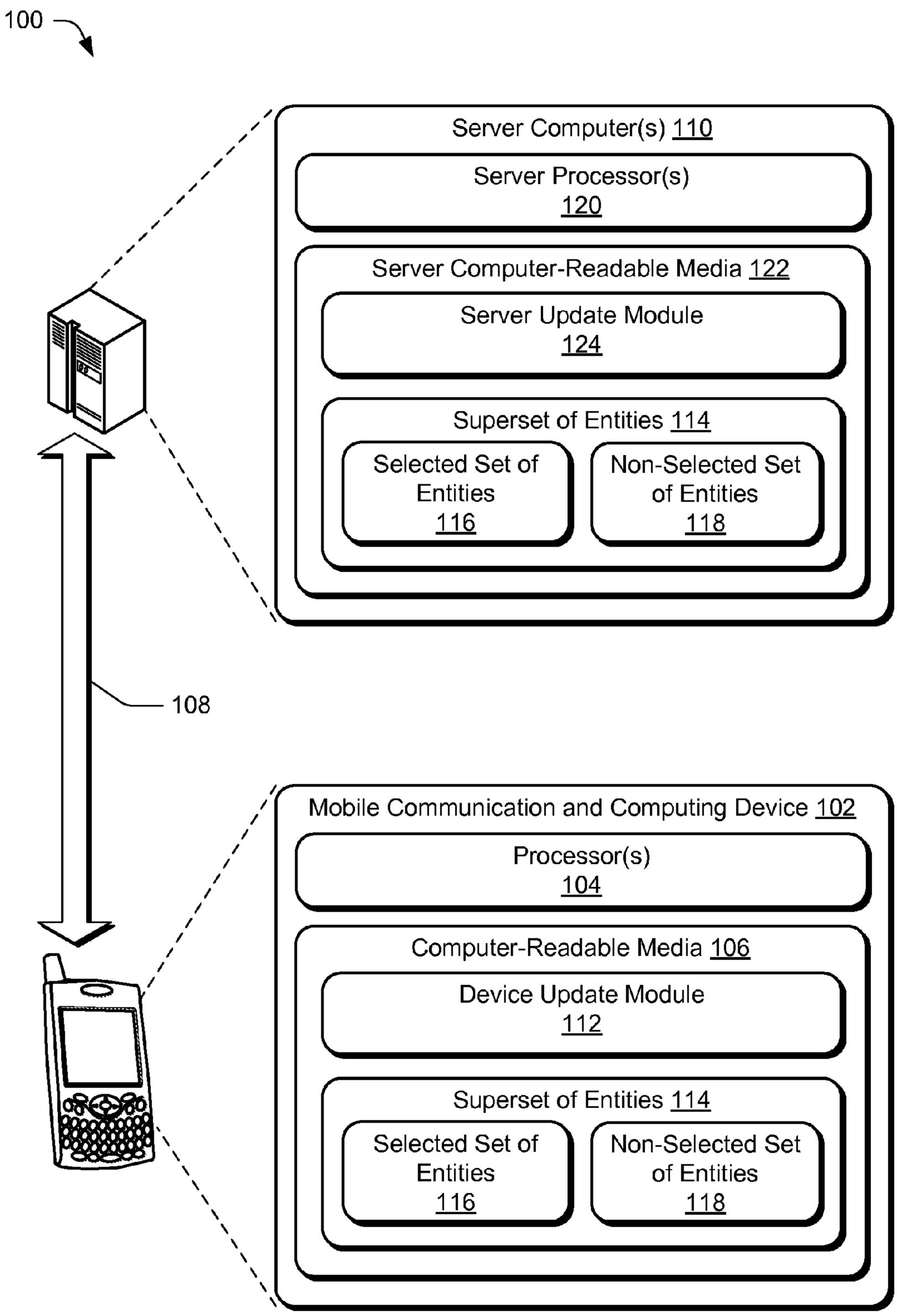

100
Server Computer(s) 110
Server Processor(s) 120
Server Computer-Readable Media 122
Server Update Module 124
Superset of Entities 114
Selected Set of Entities 116
Non-Selected Set of Entities 118
108
Mobile Communication and Computing Device 102
Processor(s) 104
Computer-Readable Media 106
Device Update Module 112
Superset of Entities 114
Selected Set of Entities 116
Non-Selected Set of Entities 118

Fig. 1

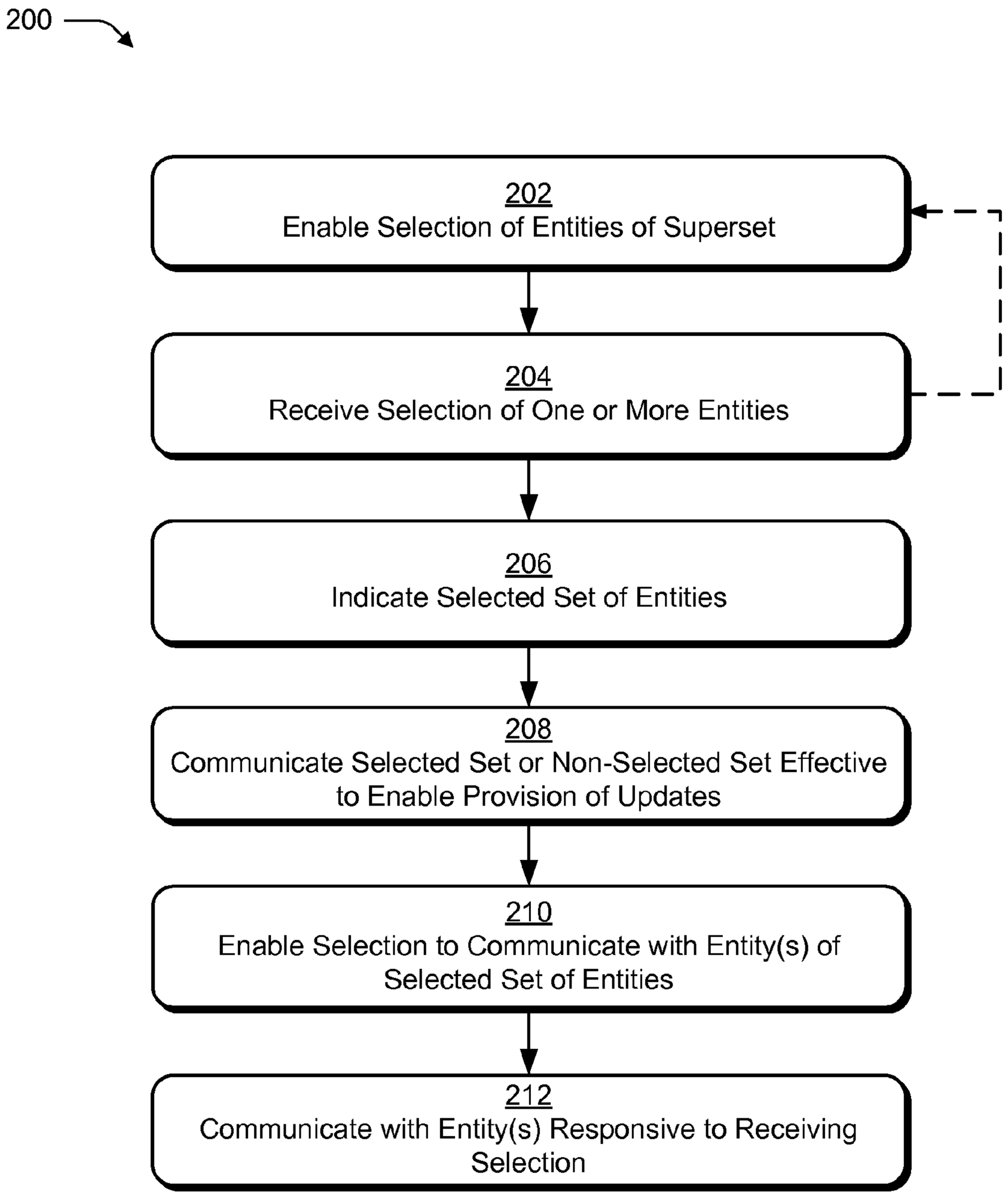

200
202
Enable Selection of Entities of Superset
204
Receive Selection of One or More Entities
206
Indicate Selected Set of Entities
208
Communicate Selected Set or Non-Selected Set Effective to Enable Provision of Updates
210
Enable Selection to Communicate with Entity(s) of Selected Set of Entities
212
Communicate with Entity(s) Responsive to Receiving Selection

Fig. 2

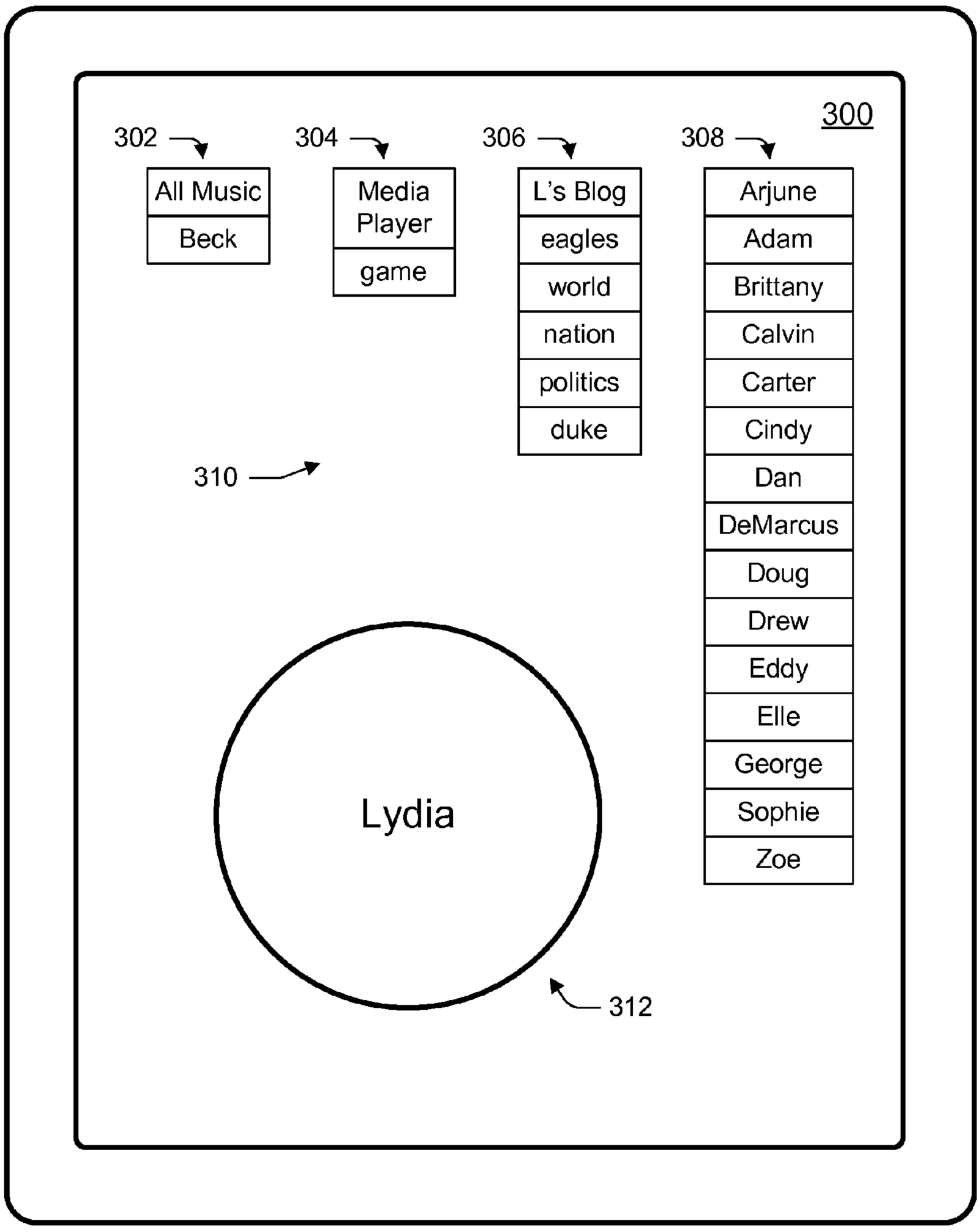

300
302
All Music
Beck
304
Media Player
game
306
L's Blog
eagles
world
nation
politics
duke
308
Arjune
Adam
Brittany
Calvin
Carter
Cindy
Dan
DeMarcus
Doug
Drew
Eddy
Elle
George
Sophie
Zoe
310
Lydia
312

Fig. 3

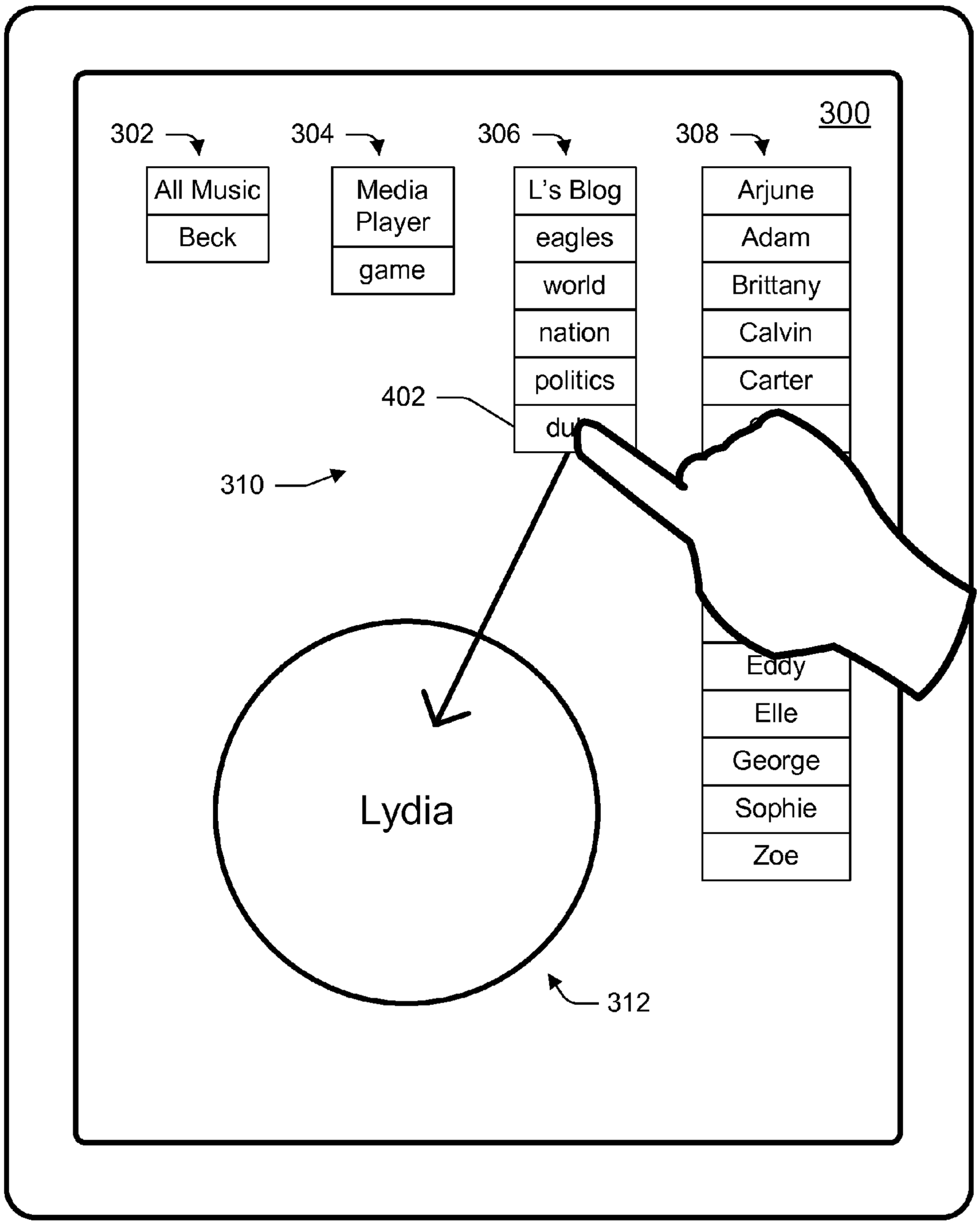

300
302
All Music
Beck
304
Media Player
game
306
L's Blog
eagles
world
nation
politics
du
308
Arjune
Adam
Brittany
Calvin
Carter
Eddy
Elle
George
Sophie
Zoe
402
310
Lydia
312

Fig. 4

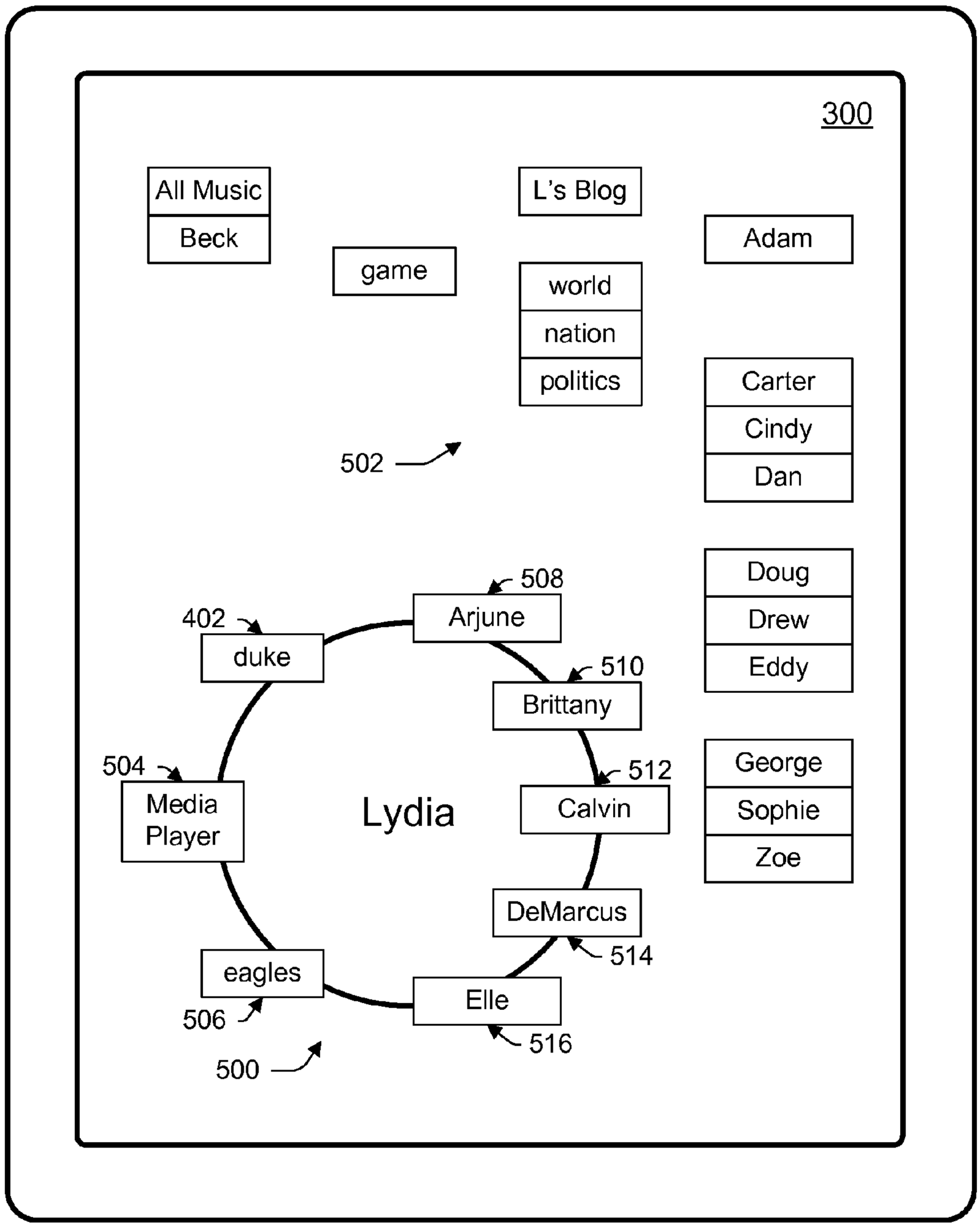

300
All Music
Beck
game
L's Blog
world
nation
politics
Adam
Carter
Cindy
Dan
Doug
Drew
Eddy
George
Sophie
Zoe
502
508
Arjune
402
duke
510
Brittany
504
Media Player
Lydia
512
Calvin
DeMarcus
514
eagles
506
Elle
516
500

Fig. 5

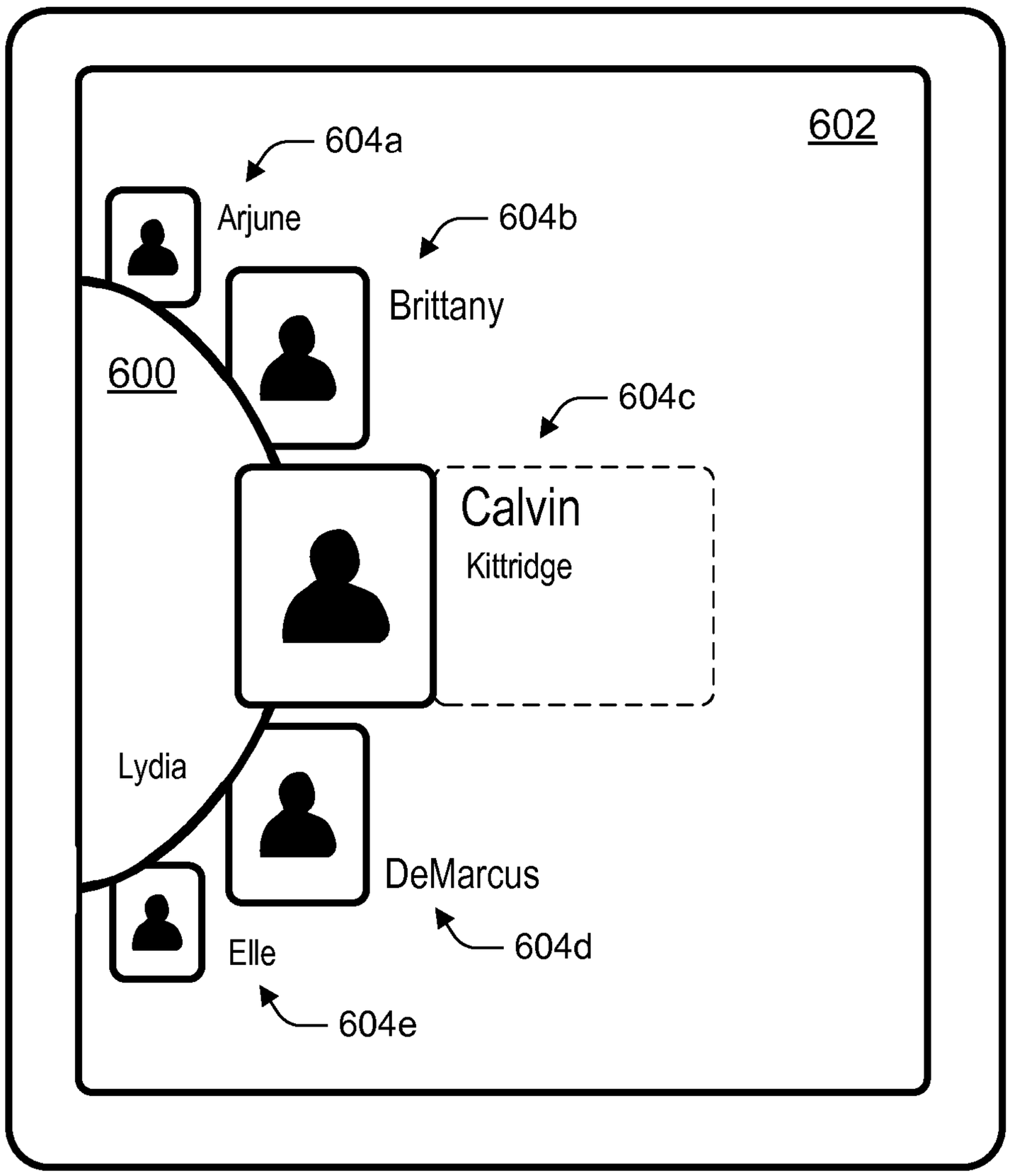

602
604a
Arjune
604b
Brittany
600
604c
Calvin
Kittridge
Lydia
DeMarcus
604d
Elle
604e

Fig. 6

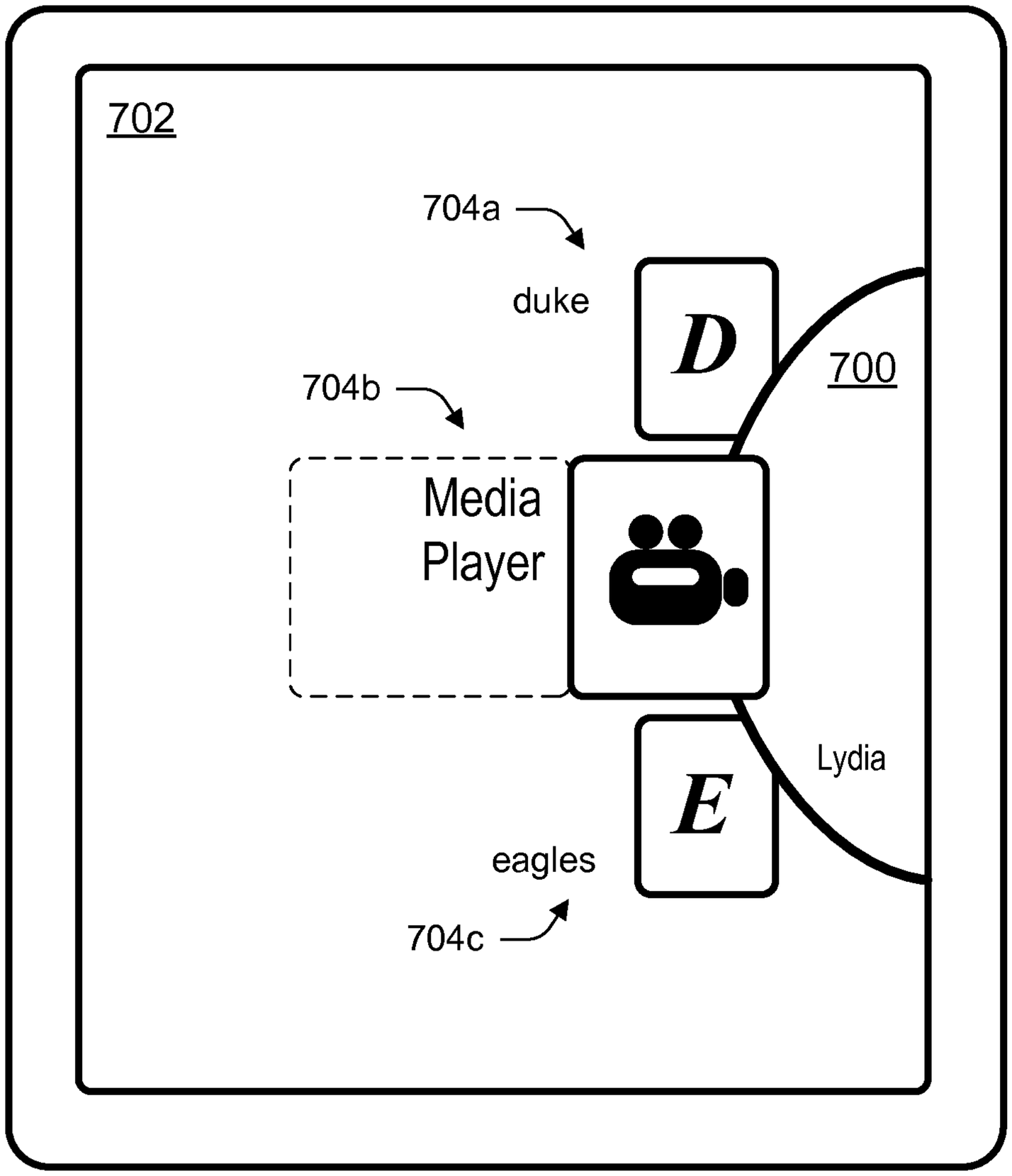


Fig. 7

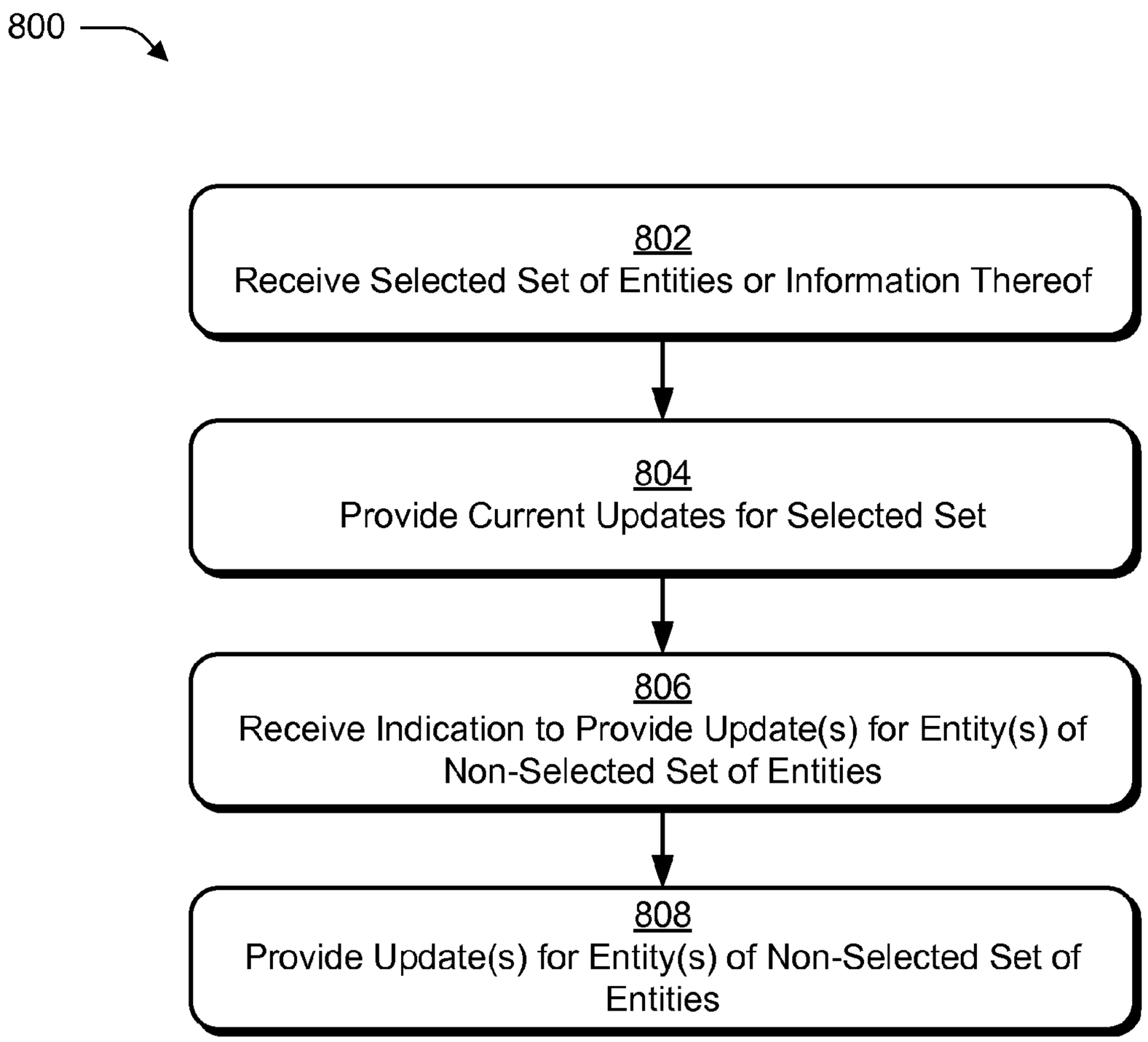

800
802
Receive Selected Set of Entities or Information Thereof
804
Provide Current Updates for Selected Set
806
Receive Indication to Provide Update(s) for Entity(s) of Non-Selected Set of Entities
808
Provide Update(s) for Entity(s) of Non-Selected Set of Entities

Fig. 8

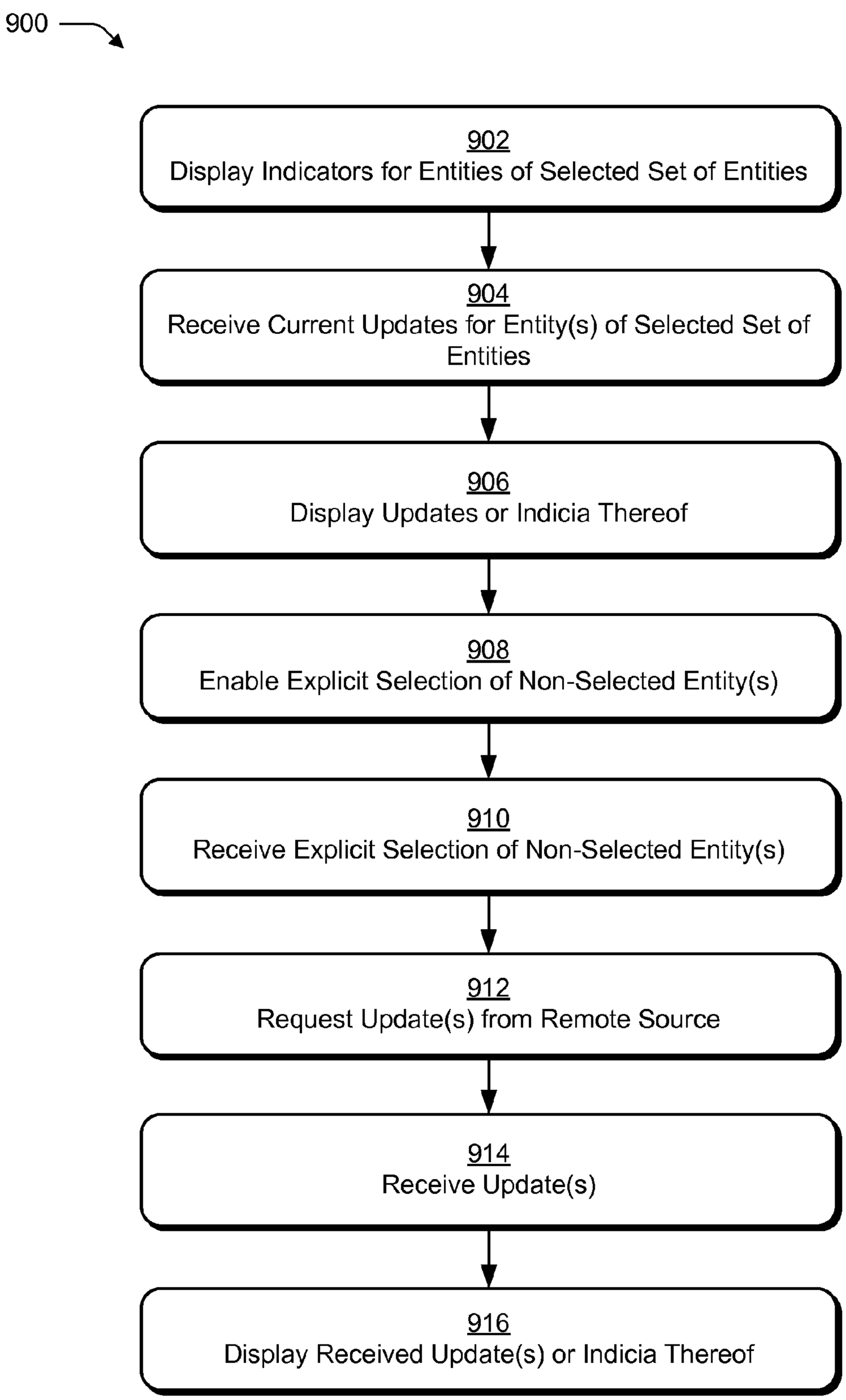

900
902
Display Indicators for Entities of Selected Set of Entities
904
Receive Current Updates for Entity(s) of Selected Set of Entities
906
Display Updates or Indicia Thereof
908
Enable Explicit Selection of Non-Selected Entity(s)
910
Receive Explicit Selection of Non-Selected Entity(s)
912
Request Update(s) from Remote Source
914
Receive Update(s)
916
Display Received Update(s) or Indicia Thereof

Fig. 9

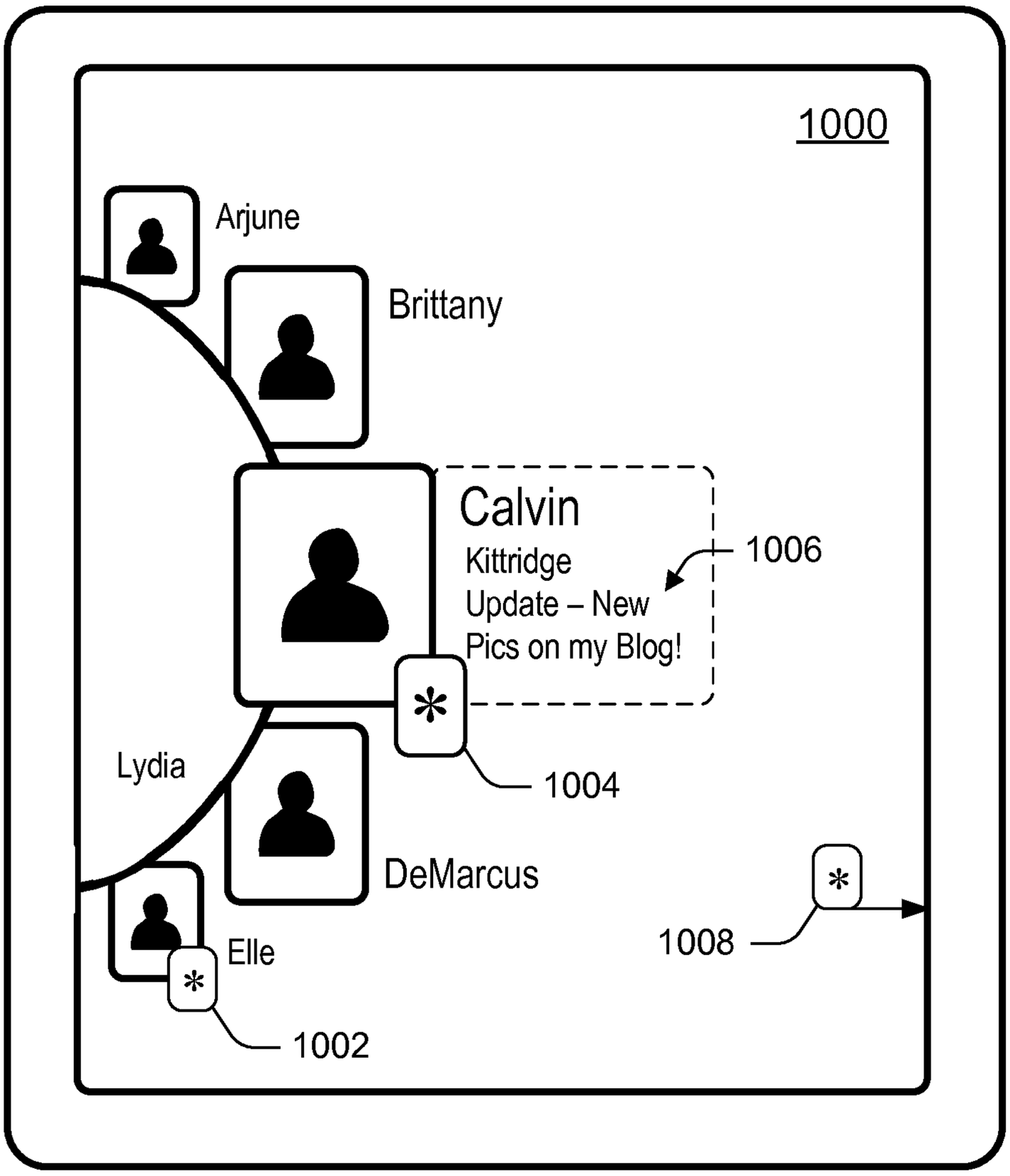

1000
Arjune
Brittany
Calvin
Kittridge
Update – New
Pics on my Blog!
1006
1004
Lydia
DeMarcus
Elle
1002
1008

Fig. 10

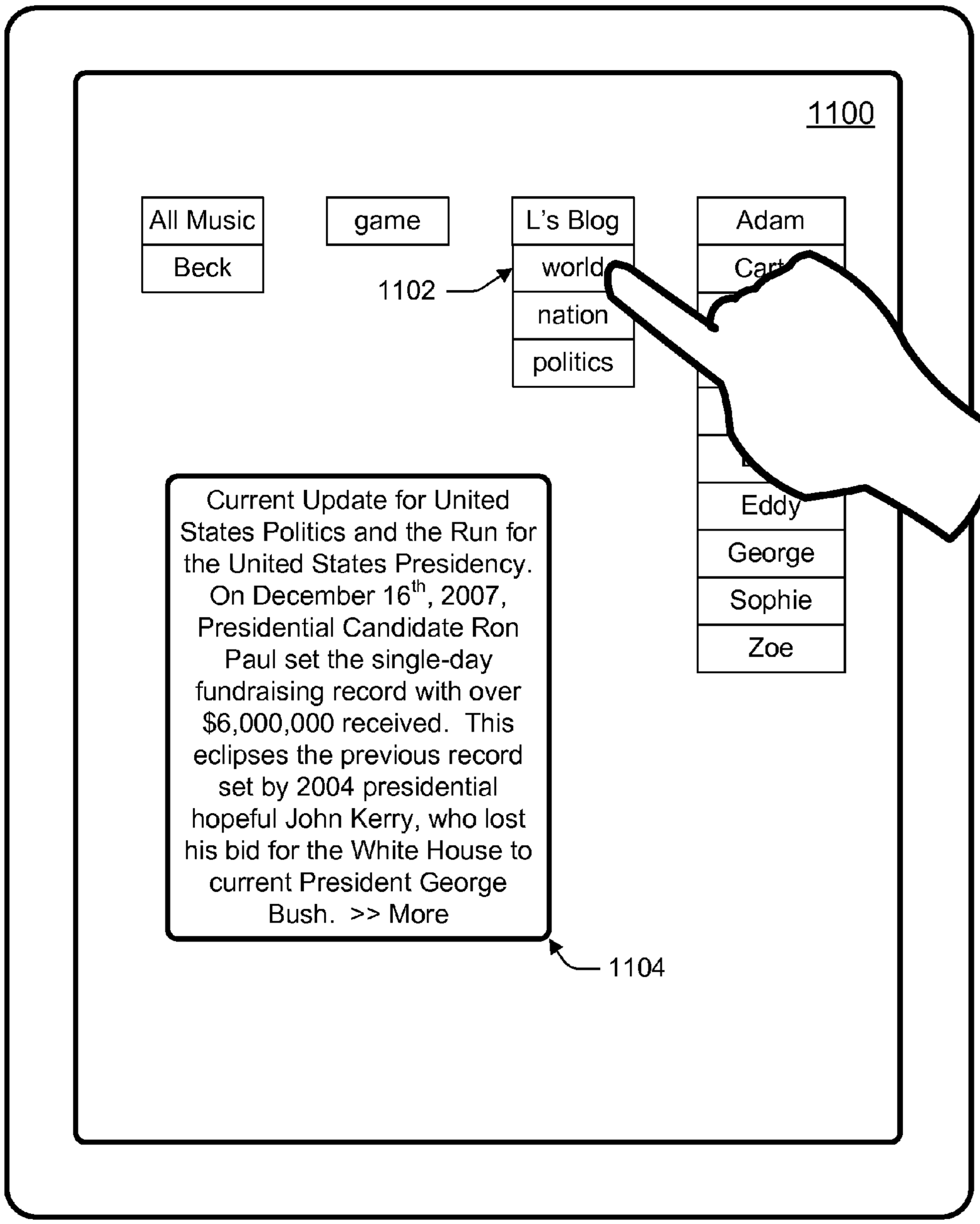

1100
All Music
Beck
game
L's Blog
world
nation
politics
1102
Adam
Eddy
George
Sophie
Zoe
Current Update for United States Politics and the Run for the United States Presidency. On December 16th, 2007, Presidential Candidate Ron Paul set the single-day fundraising record with over $6,000,000 received. This eclipses the previous record set by 2004 presidential hopeful John Kerry, who lost his bid for the White House to current President George Bush. >> More
1104

Fig. 11

CURRENT UPDATES

CROSS-REFERENCE

This application is a continuation of and claims priority under 35 U.S.C. §120 to U.S. patent application Ser. No. 13/174,325 filed on Jun. 30, 2011 and titled "Current Updates," which issued on Jul. 3, 2012 as U.S. Pat. No. 8,214,464 and is a continuation of and claims priority under 35 U.S.C. §120 to U.S. patent application Ser. No. 12/017,906, filed on Jan. 22, 2008 and titled "Current Updates," which issued on Aug. 23, 2011 as U.S. Pat. No. 8,005,927, the disclosures of which are incorporated by reference in their entirety herein.

BACKGROUND

Current mobile communication systems and devices, such as cellular networks and phones, permit users to receive updates for people, news sources, and other entities. Typically, these systems and devices provide updates for every person or other entity listed by the user, such as all of the people on a user's contact list and all the news feeds to which a user subscribes.

More and more, however, users' contact lists and news feeds may include many, many entities and receive many, many updates. Some users receive hundreds of updates a day from people on their contact lists and dozens more from news feeds.

The sheer number of updates received is often more than a user can keep up with. A user may receive updates for 100 different contacts (e.g., those on a "friends" list common to social-networking websites). Many people do not have the time or the interest to wade through all this information. Yet users often feel social pressure not to remove people from their contact lists. Removing or refusing to accept a new "friend" to a contact list is often considered rude.

Furthermore, many users receive too many updates from information sites, such as news and sports sites. A user may subscribe to a sports website but really only want up-to-date information on one team, even though he or she may want updates for other teams once in a while.

Further still, these updates may tax the resources of current mobile communication systems and devices. Current communication systems may use significant communication bandwidth to provide so many updates to a user's mobile device. Current mobile devices may use significant power to receive these updates as well, which may drain these devices' batteries more quickly than users may like.

SUMMARY

This document describes tools capable of differentiating a superset of entities from which a user may receive current updates effective to provide current updates for only some of the entities of the superset. In one embodiment, for example, the tools enable a user of a mobile device to select a set of entities from which the user will automatically receive updates that are current, easily accessible, and visible at-a-glance. The tools may forgo providing current updates for entities that are not selected by the user, though the tools may provide these updates when explicitly requested by the user or at particular times or events.

This Summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This Summary is not intended to identify key or essential features of the claimed subject matter, nor is it intended to be used as an aid in determining the scope of the claimed subject matter. The term "tools," for instance, may refer to system(s), method(s), computer-readable instructions, and/or technique(s) as permitted by the context above and throughout the document.

BRIEF DESCRIPTION OF THE DRAWINGS

The detailed description is described with reference to the accompanying figures. In the figures, the left-most digit(s) of a reference number identifies the figure in which the reference number first appears. The use of the same reference numbers in different instances in the description and the figures may indicate similar or identical items.

FIG. **1** is an illustration of an environment in which an example implementation of the tools may enable differentiation of a superset of entities from which a user may receive current updates effective to provide current updates for some of the entities of the superset.

FIG. **2** is a flow diagram depicting a procedure in an example implementation by which the tools may act to enable a user to select entities effective to differentiate between those for which current updates are desired and those for which current updates are not desired, as well as communicate with those selected entities.

FIG. **3** illustrates an example user interface displaying and enabling selection of various entities of a superset of entities associated with a user.

FIG. **4** illustrates an example drag-and-drop selection of an indicator also shown in FIG. **3**.

FIG. **5** illustrates an example user interface presenting indicators for selected entities orientated around a circle.

FIG. **6** illustrates indicators for entities of a selected set of entities, the indicators oriented around an arc and attached to a convex and arcuate shape.

FIG. **7** illustrates indicators for other entities of a selected set of entities not shown in FIG. **6**, these indicators oriented around an arc and attached to another convex and arcuate shape.

FIG. **8** is a flow diagram depicting a procedure in an example implementation by which the tools may provide current updates for a selected set of entities and forgo doing so for a non-selected set of entities, as well as other actions.

FIG. **9** is a flow diagram depicting a procedure in an example implementation by which the tools may provide updates to a user of a mobile device.

FIG. **10** illustrates an example user interface similar to that shown in FIG. **6** but showing indicia for current updates and an actual current update.

FIG. **11** illustrates an example user interface presenting selectable indicia for non-selected entities and an update provided in response to selection of one of those indicia.

DETAILED DESCRIPTION

Overview

Some communication systems and devices provide current updates for entities associated with a user, such as people on the user's friends list and news feeds subscribed to by the user. This can tax a user's time and interest. Further, as these current updates may in the future be provided by mobile communication systems and devices (e.g., cellular networks and phones), not only will these updates likely tax a user's time and interest, they may also tax the battery of a user's mobile device and the mobile network's communication bandwidth.

Consider for example Lydia Anderson, a cellular-phone user. She has a community friends list of 186 people and subscribes to 14 update feeds. Assume that all of these entities are known to her cellular phone and the phone network. Some of her friends send updates on their lives and interests often—Cindy is a prodigious updater and sends 10 to 15 updates a day. But Lydia does not know Cindy all that well or want to read that many updates a day. Compound this with some 185 other friends for which she gets updates. Add to this Lydia's news-feeds updates and Lydia may receive 500 or more updates a day to her cellular phone. Lydia simply doesn't have the time or interest to read all these updates and her phone battery dies too fast because it expends power to receive these 500 updates. Further still, the cellular-phone network is taxed sending all these updates, especially when it does so for its many cellular-phone users that receive updates.

The tools described in this document enable Lydia to differentiate between friends, feeds, and other entities associated with her so that she receives current updates for only some of them. The tools, in one embodiment, enable Lydia to automatically receive updates that are current, easily accessible, and visible at-a-glance for some entities while not being burdened with updates from some other entities. Thus, Lydia may receive updates that are current, easily accessible, and visible-at-a-glance for her friends Arjune, Brittany, Calvin, DeMarcus, and Elle, as well as for some of her news feeds, but not updates for the rest of her friends and news feeds. If Lydia decides to read, view, or browse updates for other people or feeds, such as Cindy's updates, she may explicitly choose to view those entities' updates when convenient to Lydia, such as when Lydia's phone is on a free network like Wi-Fi (e.g., a network that provides communication to a mobile device at no cost to the mobile device's user), is not solely on battery power (e.g., is plugged into a charger), or Lydia has the time to read about Cindy's many actions and interests.

In the following discussion, an example environment is first described in which the tools may enable a mobile-device user to differentiate between entities of a superset of entities from which a user may receive current updates effective to provide current updates for only some of the entities of the superset, as well as other actions. Example procedures and interfaces are then described that may be employed in the example environment, as well as in other environments. Although these tools are described as employed within a mobile communication network and device environment in the following discussion, it should be readily apparent that these tools may be incorporated within a variety of environments without departing from the spirit and scope thereof.

Example Environment

FIG. **1** is an illustration of an environment **100** in an example implementation in which the tools may differentiate and/or provide updates for some of a superset of entities associated with a user. Environment **100** includes a mobile communication and computing device (a "mobile device") **102** including one or more processor(s) **104** and computer-readable media **106**. The mobile device may be communicatively coupled, through communication network **108**, with server computer(s) **110**. Although a single communication network **108** is shown, it may represent a single network or multiple networks. For example, communication network **108** may be representative of a cellular-phone network, an Internet Protocol (IP) network, and/or other network or group of networks capable of communicating wirelessly at least in part.

Mobile device **102** may be configured in a variety of ways. For example, the mobile device may be configured as a computer that is capable of communicating over communication network **108**, such as a cellular phone or other mobile-communication-enabled device (e.g., a media player, personal digital assistant, or laptop computer). For purposes of the following discussion, the mobile device may also relate to a person that operates the mobile device. In other words, mobile device **102** may describe a logical mobile device that includes a user, software, and/or a machine. In the following discussion, the mobile device may represent one or more entities and therefore reference may be made to a single entity (e.g., mobile device **102**) or multiple entities (e.g., mobile devices **102**).

Mobile device **102** includes computer-readable media **106**, which includes a device update module **112** and a superset of entities **114** associated with the user. The superset is shown here including a selected set of entities **116** and a non-selected set of entities **118**.

Device update module **112** is capable of enabling and receiving selection or other differentiation between entities of the superset of entities, explicit selection of an entity of non-selected set of entities **118**, determining and communicating indications or requests for updates for entities of non-selected set of entities **118**, providing updates for selected entities that are current, in real-time, automatic, without user interaction, and/or in a particular display or orientation, and/or other actions and capabilities described herein.

Superset of entities **114** includes entities associated with a user, such as the user of mobile device **102**, at least some entities for which current updates are receivable or may be selected to be receivable at mobile device **102**.

An entity of the superset of entities may be a person, a group of persons, an update feed, a library, a website, or an application, to name a few. A person may be a user and/or his or her communication device, such as a text-message-receiving cellular phone, a land or wireless phone, a laptop configured to receive instant messages or calls, and so forth. An entity may be a group of persons when all of the persons may be communicated with at once, such as through an email, text-message, or conference call from mobile device **102**.

An update feed may be any source that sends or makes available information in the form of updates, such as a news website, blog, and the like. A library may be a particular set of information, such as a photo album, play list of songs or music videos, and the like. An application entity may be a software program or other executable code capable of receiving updates and performing functions on mobile device **102**, such as gaming software that can be updated, music software that can receive new songs or entertainment content in the form of automatic updates, and the like.

Superset of entities **114** is shown including selected set of entities **116** and non-selected set of entities **118**. This is to show by way of illustration that entities making up either of these sets may be those selected from the superset of entities. An entity may be selected, however, from various sources and stored separate from the superset of entities.

Turning now to server computer(s) **110**, these device(s) are capable of communicating with a mobile device, including through network **108**, and with sources of updates, such as websites, RSS (e.g., news and blog) feeds, entities or entities' devices. The server computer(s) are also capable of other actions described herein.

The server computer(s) include processor(s) **120** and computer-readable media **122**. The media includes a server

update module **124** and superset of entities **114** having selected set of entities **116** and non-selected set of entities **118** (the sets similar or identical to those of mobile device **102**).

Server update module **124** is capable of receiving selected entities or other information sufficient to differentiate selected entities from non-selected entities of the superset of entities. Based on this information, the server update module provides current updates for selected entities to mobile device **102** and forgoes providing current updates for non-selected entities, except in some cases responsive to receiving a user selection, indication, or request or on occurrence of an event. Ways in which the server update module and other elements of the server computer(s) act and interact are described in greater breadth and detail below.

Mobile device **102** and server computer(s) **110** are illustrated as executing modules on processor(s) **104** or **120**, respectively. These processors are not limited by the materials from which they are formed or the processing mechanisms employed therein. For example, processors may be comprised of semiconductor(s) and/or transistors (e.g., electronic integrated circuits (ICs)). In such a context, processor-executable instructions may be electronically-executable instructions. Additionally, media **106** and/or **122** may include a wide variety of types and combinations of memory, such as random access memory (RAM), hard disk memory, removable medium memory, and other types of computer-readable storage media.

Note also that one or more of the elements shown in FIG. **1** may be further divided (e.g., device update module **112** or server update module **124**), combined, and so on. Thus the environment **100** of FIG. **1** is illustrative of one of a plurality of different environments that may employ the described techniques.

Generally, any of the actions, operations, and/or functions described herein can be implemented using software, firmware, hardware (e.g., fixed-logic circuitry), manual processing, or a combination of these implementations. The terms "tool" and "module," as used herein generally represent software, firmware, hardware, whole devices or networks, or a combination thereof. In the case of a software implementation, for instance, a module may represent program code that performs specified tasks when executed on a processor (e.g., CPU or CPUs). The program code can be stored in one or more computer-readable memory devices, such as computer-readable media **106** or **122**. The features and techniques of the tools are platform-independent, meaning that they may be implemented on a variety of commercial computing platforms having a variety of processors.

Example Procedure with User Selection

The following discussion describes ways in which the tools may operate to enable differentiation between entities of a superset of entities effective to enable provision of current updates for some entities of the superset and forgo provision of current updates for some other entities of the superset, as well as other actions. Aspects of this procedure may be implemented in hardware, firmware, or software, or a combination thereof. The procedure is shown as a set of blocks that specify operations performed by the tools, such as through one or more modules or devices and are not necessarily limited to the orders shown for performing the operations by the respective blocks. In portions of the following discussion, reference may be made to the environment **100** of FIG. **1**.

FIG. **2** depicts a procedure **200** in an example implementation in which the tools enable a user to select entities effective to differentiate between those for which current updates are desired and those for which current updates are not desired, as well as communicate with one or more entities of the selected set of entities. Example user interfaces and selection manners are described as part of this example procedure, though other user interfaces and selection manners are contemplated herein.

Block **202** enables selection of one or more entities of a superset of entities, such as by displaying selectable indicators for entities of the superset. These indicators may include icons, photographic images, text, and the like. The selection may be made through a search, entry of information indicating the selections, a gesture (e.g., slide, press and hold, or tap) or drag-and-drop with a stylus or finger on a display capable of receiving these types of input, or in other manners.

Consider again the example of Lydia Anderson, who has contacts (e.g., friends), feeds, and the like on her cellular phone. These are entities of her superset of entities **114**. She would like to select from these entities to differentiate those for which she automatically receives current updates on her cellular phone and those for which she does not.

By way of illustration consider FIG. **3**, which shows an example user interface **300** displaying and enabling selection of two libraries **302**, two software programs **304**, six news feeds **306**, and twelve contacts **308**. Many more entities than these 22 shown here are contemplated but not displayed for brevity and visual clarity.

Block **204** receives selection of one or more entities of the superset of entities. The tools may receive these selections one-at-a-time, in groups, or all at once. If one-at-a-time or in groups the tools may repeat blocks **202** and **204** for additional selections, shown with a dashed line from block **204** to block **202**.

This selection may be received through the user's mobile device or received from a remote source, such as a user selecting these entities through a network-enabled device communicating with computer server(s) **110** and/or mobile device **102**. If received from a remote source the enabling of block **202** may be performed on the remote device or a device in communication with the remote device (e.g., server update module **124** of server computer(s) **110**).

In the ongoing example the tools act, at blocks **202** and **204**, through device update module **112** on mobile device **102** (here Lydia's cell phone). The device update module enables selection by drag-and-drop of indicators for the entities from one or more lists displayed in selection area **310** into selected set area **312**. The selection area is labeled with the user's name ("Lydia").

FIG. **4** illustrates an example drag-and-drop selection, showing a fingertip **400** beginning to drag and drop indictor **402** for the duke news feed from selection area **310** to selected set area **312**.

As noted, block **204** may receive many selections through various manners. Assume that here the tools received the indicator **402** for the duke news feed as well as indicators for Lydia's Media Player application, eagles news feed, and her contacts Arjune, Brittany, Calvin, DeMarcus, and Elle.

Block **206** indicates, such as on a display of the mobile device, the selected set of entities effective to visually differentiate the selected set of entities from the non-selected set of entities. Indicators for the entities of the selected set may be displayed all at once or in part. FIG. **5** illustrates the example user interface **300** of FIGS. **3** and **4** but presenting indicators for all of Lydia's selected entities in a circular orientation **500**. Note that the tools indicate selection of these indicators/entities by removing indicators for the selected entities from the superset of entities. The remaining

entities of the superset at **502** are non-selected entities (an example of non-selected set of entities **118** of FIG. **1**). The tools also indicate that the selected entities are part of a selected set by displaying indicators for the selected entities, here the indicator **402** for the duke news feed and indicators for Lydia's Media Player application at **504**, eagles news feed at **506**, Arjune at **508**, Brittany at **510**, Calvin at **512**, DeMarcus at **514**, and Elle at **516**.

Block **206** may present indicators for entities of the selected set oriented around an arc and/or convex shape, such as attached to a convex and arcuate shape **600** of graphical user interface **602** shown in FIG. **6**. This graphical user interface indicates at least some of the selected entities; here indicators for Lydia's selected contacts are displayed but her media player and news feeds are not. Lydia's selected contacts, namely Arjune, Brittany, Calvin, DeMarcus, and Elle, have displayed indicators **604***a*, **604***b*, **604***c*, **604***d*, and **604***e*, respectively. Graphical user interface **602** may also enable selection of any of these entities easily and simply, such as through a single or multiple user input like a fingertip or stylus gesture on an indicator associated with an entity. Responsive to a selection, mobile device **102** may establish communication with such selected entity. This is further described below. Some advantages of such a user interface include that it enables a portion of the primary contacts to be displayed for easy access and provides an intuitive indication to the user by the use of the half circle that other contacts are also available and within easy reach. This minimizes the display area required to show all of the most important contacts to the user. In addition, once the user is familiar with the set of contacts who are part of the full circle (which may only be half shown at a given time), the design of this interface has the same effect as displaying the full circle as the user will most likely mentally complete the half circle into the full undisplayed circle of contacts when looking at the phone and access any of those contacts in the circle by spinning the circle around to the desired contact.

Additionally or alternatively, graphical user interface **602** may present updates or indicia thereof to a user such that the updates or indicia are visible-at-a-glance, easily accessible, and up-to-date. An example of this ability is described and illustrated below.

The other selected entities may be displayed similarly to those shown in graphical user interface **602**, such as attached to another convex and arcuate shape **700** of graphical user interface **702** shown in FIG. **7**. Indicators are displayed for each of these selected entities, indicator **704***a* for the duke news feed, **704***b* for the media player, and **704***c* for the eagles news feed. Note that all of these indicators of FIGS. **6** and **7** include icon indicators in addition to the text indicators shown in FIG. **5**. These indicators may also include photographic images and other types of indicators as well.

Block **208** communicates the non-selected set or the selected set effective to enable provision, including without further user interaction (e.g., no user interaction other than the prior selecting of the entities into the set), of current updates provided for the entities of the selected set and not provide without further user interaction updates provided for the entities of the non-selected set.

In the case of selections made through mobile device **102**, device update module **112** communicates information to a remote entity remote from the mobile device, the communicating using a mobile communications network. The remote entity may include server computer(s) **110** and/or server update module **124** and the mobile communications network may include network **108**. This communication of information is effective to enable the server computers and server update module **124** to determine to provide, over a mobile communications network, automatically, and without further user interaction, current updates provided for the entities of the selected set and not provide without further user interaction updates provided for the entities of the non-selected set.

The tools, as illustrated and described in greater detail below, may provide current updates for the selected set of entities, such as by displaying such updates or indicators thereof on any of user interfaces **500**, **602**, or **702** of FIGS. **5**, **6**, and **7**. Provision of updates is also described as part of procedures **800** and **900** of FIGS. **8** and **9**, respectively.

Returning to procedure **200**, the tools may proceed to block **210** to enable selection by the user to communicate with an entity of the selected set of entities. The tools may do so responsive to as little as a single user input, such as a gesture with a finger or stylus on a displayed indicator (e.g., Arjune, Brittany, Calvin, DeMarcus, and Elle, which have display indicators **604***a*, **604***b*, **604***c*, **604***d*, and **604***e*, respectively, in FIG. **6**). Responsive to receiving such a selection, the tools may communicate with the selected entity at block **212**. This communication may include a call (voice alone or voice and video), instant message, sharing of a file (e.g., photo, video, and music), a "nudge" or "poke" (a one-button command to send a simple message like "I'm thinking of you"), or text message, to name a few.

As noted at block **208**, the tools communicate the selected set of entities or information sufficient to differentiate the selected set of entities from the non-selected set to some entity. Procedure **800** of FIG. **8** may receive this information at block **802**, though procedure **800** may also be separable and independent from procedure **200**. In either case, the following discussion describes ways in which the tools may provide current updates for the selected set of entities and forgo doing so for the non-selected set. Aspects of this procedure may be implemented in hardware, firmware, or software, or a combination thereof. The procedure is shown as a set of blocks that specify operations performed by the tools, such as through one or more modules or devices, and are not necessarily limited to the orders shown for performing the operations by the respective blocks. In portions of the following discussion, reference may be made to the environment **100** of FIG. **1** and the ongoing example(s).

Block **802** receives a selected set of entities of a superset of entities associated with a user or information sufficient to differentiate the selected set of entities from non-selected entities of the superset of entities. This information may be received from a user using a mobile or other type of device, including the information communicated at block **208**. The tools may act through server computer(s) **110** and server update module **124**, such as in the ongoing example of Lydia Anderson.

Continuing this example, the server update module at block **802** receives Lydia's selected set of entities from mobile device **102** through a mobile communications network (e.g., network **108**).

Block **804** provides current updates for each of the selected entities to a mobile device associated with the user and forgoes providing current updates for the non-selected entities, the providing effective to enable the mobile communication and computing device to display current updates for the selected entities.

Block **804** may also provide current updates in real-time and automatically, such as by passively receiving updates for entities, determining which of those entities are selected

entities, and for those that are, providing such updates as they are received to the user's mobile device and through a mobile communication network.

Block **804** may also retrieve updates for selected entities at particular times or periodically, such as stock quotes for a selected stock-quote-providing entity whenever those stock quotes are expected to be available (e.g., every 15 minutes during business hours). Whether passive or active in receiving or retrieving updates, the tools provide updates effective to enable the mobile device to display updates or indicia thereof to a user in real-time and automatically. Note that the tools, by forgoing provision of updates for non-selected entities, may save power resources of a mobile device and/or bandwidth resources of the mobile network that would have been used if the mobile device were provided current updates for the non-selected entities of the superset of entities.

Continuing the ongoing example, consider Lydia Anderson's selected entities. The server update module may receive these responsive to Lydia selecting them on her cellular phone and the phone communicating them to the server computer(s). Assume that at some future time the server update module receives updates for Cindy, the duke news feed, world news feed, Calvin, and Elle. The server update module then determines that Lydia does not want current updates for Cindy and the world news but does for the duke news feed, Calvin, and Elle based on Lydia's prior selections. The server update module then provides the updates for the duke news feed, Elle, and Calvin to Lydia's cellular phone. Here Lydia's cellular phone and her communications network are not burdened with receiving and communicating updates for Cindy and the world news. Ways in which Lydia's cellular phone or other mobile devices may act based on receiving this information are described elsewhere herein (e.g., procedure **900**).

Procedure **800** may end at block **804** or continue to block **806**. Block **806** receives an indication to provide update(s) for one or more of the non-selected entities of the superset of entities. This indication may come in the form of an explicit request made by the user of the mobile device or the device itself. The user may select to receive updates stored or accessible by server computer(s) **110** for a non-selected entity for which the user would otherwise not receive updates. Assume here that Lydia selects to receive all of the updates for her world news feed and that an indication of this is received by server update module **124** at block **806**.

The request may also be made by the mobile device but not made by its user, such as when the device recognizes that it is now powered by a non-battery source and thus may receive updates without draining its battery. Lydia, for example, may have plugged her cellular phone into its charger.

The indication received by block **806** may be from another source and responsive to occurrence of an event (rather than a request from a user or a user's device), such as when network **108** determines that it has unused bandwidth with which to communicate the updates for non-selected entities. It may also be on a combination of these, such as when the device is on a free network or is not on battery power at the same time as when the network has this unused bandwidth.

Block **808**, responsive to receiving this indication, provides one or more updates for one or more non-selected entities. Thus, if Lydia requests to receive updates for her world news feed, the server update module may receive this request and provide all of the world news updates to Lydia's cellular phone that Lydia's phone has not previously received.

Example Procedure for Providing Updates

The following discussion describes ways in which the tools may provide updates to a user of a mobile device, shown as procedure **900** of FIG. **9**. Aspects of this procedure may be implemented in hardware, firmware, or software, or a combination thereof. The procedure is shown as a set of blocks that specify operations performed by the tools, such as through one or more modules or devices, and are not necessarily limited to the orders shown for performing the operations by the respective blocks. In portions of the following discussion, reference may be made to the environment **100** of FIG. **1**, procedures **200** or **800**, and the ongoing example.

Block **902** displays, on a display of a mobile device, indicators for entities selected from a superset of entities. The tools may do so similarly as to that described according to block **206** of procedure **200** and illustrated at FIGS. **5**, **6**, and/or **7**.

Block **904** receives current updates for the entities selected from the superset of entities and for which indicators may be displayed. These updates may be received automatically and without user interaction for entities of a selected set of entities, which may be displayed in part or in total on a mobile device. Block **904** may receive these updates from a remote source, such as server computer(s) **110** sending updates as shown at block **804** of procedure **800**.

Continuing the ongoing example, Lydia's cellular phone may receive, in real-time and automatically, current updates for her duke news feed and her friends Calvin and Elle.

Block **906** displays each of the current updates or indicia thereof on the display and visually associated with the indicator for the entity for which each of the current updates is received. The tools may act to display these updates such that they are visible at-a-glance, up-to-date, and easily accessible.

By way of example, see FIG. **10**, which provides a graphical user interface **1000** similar to that of graphical user interface **602** of FIG. **6** but showing indicia for an update for Elle at **1002** and indicia for an update for Calvin at **1004**, as well as the actual update itself for Calvin at **1006**, here because his indicator is more-prominently displayed than that of Elle's. Note also that the update for Lydia's duke news feed is not shown but an indicator **1008** indicates that an update has been received for one of her non-person entities (those of FIG. **7**). The substance of the update for Elle or duke may be displayed without further user interaction, though with a small display typically used on many mobile devices a selectable indicator showing that an update is received and that, if selected or if the entity is made more prominent (e.g., moving Elle to Calvin's location in the user interface), will cause the device to show the substance of the update, is instead used in this example.

Block **908** enables explicit selection to receive an update for an entity of the superset of entities that is not one of the selected entities and for which current updates are not received automatically and without user interaction. The tools permit a user to select and receive updates for non-selected entities, such as Cindy or the world news in the above example. This can be from explicit selection, such as from the user, or based on some indication (as noted in procedure **800** above).

Consider user interface **1100** of FIG. **11**, in which Lydia's cellular phone presents entities of the non-selected set of

entities. Lydia may select from these in various manners noted above for selecting indicia, here with a single gesture (e.g., a tap) of a finger tip **400** on indicia **1102** for the world news feed.

Block **910** receives selection of a non-selected entity. Here assume that Lydia selects to receive updates for her world news feed.

Block **912** requests from a remote source and through a mobile communication network update(s) for one or more entities of a non-selected set of entities (non-selected to receive ongoing current updates but possibly selected for an update at a particular time). As noted above, the request may be responsive to receiving an explicit request (e.g., at block **910**) or may be based on some other criteria, such as the mobile device being powered by a non-battery source. In this example it is responsive to an explicit request.

Block **914** receives update(s) for one or more entities of the non-selected set of entities. The tools may receive these updates from server update module **124** of FIG. **1** and for one, some, or all of the non-selected set of entities **118**. As noted above, the updates may be received responsive to some other type of indicator other than a request, such as on occurrence of an event.

Block **916** displays the received update(s) or indicia thereof on the display of the mobile device. Similarly to that of block **906**, the tools may display updates or indicia indicating that an update is received. If a particular entity is selected, the tools may present the substance of the update rather than or in addition to indicia thereof. Consider again, for example, FIG. **11**, in which a portion of the substance of an update for Lydia's world news feed is displayed at **1104** responsive to Lydia's request to receive an update.

CONCLUSION

Although the invention has been described in language specific to structural features and/or methodological acts, it is to be understood that the invention defined in the appended claims is not necessarily limited to the specific features or acts described. Rather, the specific features and acts are disclosed as example forms of implementing the claimed invention.

What is claimed is:

1. A computing device comprising:

a processing system having one or more processor devices;

one or more computer-readable storage media storing instructions, that when executed via the processing system, implement a user interface configured to:

display, on a display device, visual indicators to represent multiple entities associated with a particular user account in the user interface, with group representations being displayed as a list associated with the visual indicators that represent the multiple entities;

expose a selected set area in the user interface to represent a communication group configured to include selected entities of the multiple entities in lieu of non-selected entities of the multiple entities, the selected set area having an arcuate shape in the user interface and configured to display the selected entities around the arcuate shape, the selected entities designated for interactions as a group via the particular user account;

enable modification of entities included in the communication group by drag-and-drop selection of visual indicators for the entities to place the visual indicators into the selected set area that represents the communication group, the display of the visual indicators configured to enable the selection of the selected entities from different types of entities including at least one or more websites; and

automatically and without user intervention obtain updates from one or more of the selected entities of the communication.

2. The computing device as recited in claim **1**, wherein the selected set area is represented as a partially enclosed portion of the user interface to receive the visual indicators for the entities to add to the communication group.

3. The computing device as recited in claim **1**, wherein the multiple entities associated with the particular user account include one or more contacts associated with the particular user account.

4. The computing device as recited in claim **1**, the user interface being further configured to enable communicating with the selected entities of the communication group as a group.

5. The computing device as recited in claim **4**, wherein the communicating comprises sending a group communication to the selected entities of the communication group.

6. The computing device as recited in claim **4**, wherein the obtaining comprises automatically obtaining updates corresponding to at least one additional selected entity of the communication group.

7. The computing device as recited in claim **1**, wherein the multiple entities associated with the particular user account include an existing group of contacts.

8. The computing device as recited in claim **1**, wherein the selected entities of the communication group include at least two entities that are different types of entities.

9. The computing device as recited in claim **1**, wherein the update indicator includes a selectable indicator and the user interface being further configured to enable:

detecting availability of current updates for one or more of the selected entities of the communication group; and

presenting the selectable indicators to indicate the availability of the detected updates in conjunction with icons that represent corresponding selected entities via the user interface, the selectable indicators being selectable to cause the computing device to show substance for corresponding current updates.

10. The computing device as recited in claim **1**, the user interface being further configured to enable:

responsive to placement of visual indicators for one or more selected entities into the selected set area:

including the one or more selected entities in the communication group; and

outputting a visual indication configured to indicate inclusion of the one or more selected entities in the communication group.

11. One or more computer-readable storage memories having computer-readable instructions thereon that, when executed by a computing device, implement a communication module configured to:

display, on a display device associated with the computing device, visual indicators to represent multiple contacts associated with a particular user account in a user interface for the communication module, the multiple contacts comprising at least one or more social media contacts and one or more contacts representing a website;

expose group representations in the user interface in one or more arcuate shapes to represent one or more respective communication groups each configured to include selected contacts of the multiple contacts in lieu

of non-selected contacts of the multiple contacts, the group representations displayed as a list associated with the visual indicators that represent the multiple contacts, visual indicators representing each of the selected contacts being displayed around the arcuate shape of the respective communication group, the selected contacts designated for interactions as a group via the particular user account; and

enable interaction through the group representations to modify selected contacts in the one or more communication groups including at least selection of contacts for inclusion in each of the communication groups and creation of a new communication group.

12. The one or more computer-readable storage memories as recited in claim **11**, wherein the communication module is further configured to:

obtain a user selection of one or more selected contacts to add to a particular one of said communication groups; and

responsive to the user selection, output a visual indication to represent inclusion of the selected contacts in the particular communication group.

13. The one or more computer-readable storage memories as recited in claim **12**, wherein:

the user selection comprises dragging and dropping of the visual indicators for the selected contacts onto one of said group representations corresponding to the particular communication group; and

the communication module is further configured to represent movement of the visual indicators for the selected contacts into said group representation corresponding to the particular communication group.

14. The one or more computer-readable storage memories as recited in claim **12**, wherein:

the user selection further comprises selecting the particular communication group from the list to cause addition of one or more selected contacts to the particular communication group.

15. The one or more computer-readable storage memories as recited in claim **11**, wherein the communication module is further configured to display the group representations as multiple graphical representations each corresponding to one of said communication groups and partially enclosing a portion of the user interface.

16. A method implemented by a computing device comprising:

displaying a list of multiple contacts associated with a user account in a selection area of a user interface, the multiple contacts comprising at least one or more social media contacts and one or more contacts representing a website;

exposing multiple representations in the user interface to represent communication groups each configured to include selected contacts of the multiple contacts in lieu of non-selected contacts of the multiple contacts, the multiple representations displayed as the list associated with visual indicators that represent the multiple contacts, the selected contacts designated for interactions within respective groups via the particular user account, the multiple representations comprising at least a first arcuate shape displaying icons representing contacts selected for a first communication group and a second arcuate shape displaying icons representing contacts selected for a second communication group;

obtaining a selection of one or more selected contacts from the list to include in a particular one of the communication groups; and

responsive to the user selection, modify the particular communication group to include the one or more selected contacts that are selected from the list.

17. The method of claim **16**, wherein:

one of said representations is configured to enable creation of a new communication group; and

modification of the particular communication group comprises creating the new communication group to include the selected contacts.

18. The method of claim **16**, wherein modification of the particular communication group comprises adding the one or more selected contacts to an existing set of contacts in the particular communication group.

19. The method of claim **16**, wherein selection of the one or more selected contacts from the list comprises dragging of the selected contacts from the list and dropping of the selected contacts into one of the representations that represents the particular communication group.

20. The method of claim **16**, further comprising upon addition of the one or more selected contacts to the particular communication group, output a visual indication in connection with one of the representations that represents the particular communication group to indicate inclusion of the one or more selected contacts in the particular communication group.

21. The computing device as recited in claim **1**, the user interface further configured to display a portion of the selected contacts of the communication group based on a relative importance of the selected contacts to the user.

22. The computing device as recited in claim **1**, the user interface further configured to enable explicit selection from the selected entities and the non-selected entities of a particular entity in order to receive one or more updates relating to the particular entity.

* * * * *